



Future of Banking Study

Limited-Purpose Banks: Their Specialties, Performance, and Prospects

Chiwon Yom

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By Chiwon Yom*

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Introduction

Limited-purpose banks are institutions that specialize in relatively narrow business lines. Some limited-purpose banks concentrate on making a certain type of loan, some serve a subset of consumers, and some offer an innovative product. As niche players focusing on a limited set of activities, these institutions can quickly develop expertise in their particular business lines and can become efficient producers. Specialization may have been promoted by technological innovations, which generally lead to gains in productivity and economies of scale.

This study examines credit card banks, subprime lenders, and Internet primary banks. Although numerically these institutions make up a small share of the financial services industry, their unique products and technologies have attracted considerable attention. Insured institutions such as MBNA, Provident, and ETrade Bank are examples of limited-purpose banks specializing, respectively, in credit card services, subprime lending, and Internet banking.

Credit card banks offer their customers both convenience and liquidity by providing a financial product that can be used as a means of payment and a source of instant credit. These banks are very profitable, earning higher income than the industry. Their use of technology and the benefits of economies of scale have probably contributed to their superior financial performance.

Subprime lenders are insured institutions that specialize in lending to people with poor credit histories. By focusing on a customer base that was formerly shunned by the banking industry, these banks can boost their profit margins. Although some subprime

lenders have outperformed the industry, others have either failed, experienced large losses, or remained in business but exited the subprime market altogether.

Internet primary banks use the Internet as their sole means of delivering banking services. It was once widely believed that Internet banks could earn higher profits by eliminating physical branches and reducing overhead expenses. However, cost reductions and higher profitability have not been realized, and Internet banks continue to underperform relative to the industry. Their underperformance may reflect limited consumer demand for Internet banking services. And relative to branching banks, Internet banks are at a competitive disadvantage in lending to small businesses because they lack the means of building long-term relationships with borrowers.

The next section reviews some of the important technological innovations that promoted the growth of limited-purpose banks. The subsequent section describes the data used in this study. Then come three sections analyzing, respectively, credit card banks, subprime lenders, and Internet banks. Each of those three sections describes the unique characteristics of the particular type of limited-purpose bank, along with the distinctive business model used; compares that type of limited-purpose bank with the rest of the industry in terms of financial performance and risk characteristics; and assesses those banks' viability and prospects. A final section concludes.

Technological Innovations in the Financial Services Industry

⁷ See Wenninger, 2000.

Technological improvements have played an important role in the growth of limited-purpose banks as well as in the broader financial services industry. Some people even argue that improvements in technology led financial institutions to specialize. Jim Marks, a director at Credit Suisse First Boston, states, “The lessons over the past 20 to 30 years have taught us that technological improvements lead to specialization.”⁷

Technologically intensive production processes generally exhibit large economies of scale which means that larger operations have lower costs. By producing a large quantity of a single product, these banks can benefit from scale economies. In addition, specialization may reduce the risky investments in technology that banks need to make.

A number of innovations were vital to implementing the business models adopted by limited-purpose banks. Among these innovations are data-mining techniques, electronic payment systems, securitization, and the Internet.

Data-mining techniques are increasingly used for various purposes in the financial services industry. The most significant example of their use is in credit scoring. Credit scoring uses historical data and statistical techniques to produce a score that summarizes a loan applicant’s credit risk. Credit scoring is used to speed up credit decisions, to price loans, to constitute input in automated underwriting processes, to screen prospective customers, to price the default risk of asset-backed securities in secondary markets, and to monitor accounts.

Data-mining techniques are also used by financial institutions to target potential customers for solicitations and to manage existing accounts. To attract new customers, institutions use data-mining techniques to identify potential customers. Institutions can target potential customers of a certain credit quality or can identify the potential

customers most likely to respond to specific offers (such as free airline miles or low-cost balance transfers). Once the institutions obtain new customers, they can use the data to manage the accounts on an ongoing basis. They may use customer-specific information to assess which accounts are most profitable for them or to predict which customers are likely to defect to a competitor. The limited-purpose banks examined in this study, especially credit card banks and Internet banks, rely heavily on data-mining techniques. These banks operate in a national market and have little direct contact with borrowers, so data mining is the only feasible way for them to solicit potential customers, underwrite loans, and manage customers' accounts.

Electronic payment systems, which are methods of transferring funds electronically, are another important innovation in the financial services industry. Studies have found results that are consistent with electronic payments technologies displaying economies of scale (Berger [2003]). Moreover, improvements in technology have dramatically reduced the costs of processing electronic payments and increased the availability of such processing. Such improvements benefited credit card banks as lower cost and increased availability of electronic payments technology has led more retail businesses to accept payments by credit card. Internet banks, too, rely heavily on electronic payments technology. Lacking physical branches, they rely both on ATMs to give their customers access to cash and on the Automated Clearing House (ACH) for fund transfers.

Securitization, which is a process of pooling financial assets into commodity-like securities, has also played a vital role in the growth of limited-purpose banks. Securitized financial assets typically include credit card balances, automobile loans and

leases, commercial and residential first mortgages, commercial loans, home equity loans, and student loans.⁸ The pool of assets is transferred to a special-purpose entity, which issues securities that are rated, underwritten, and then sold to investors. During the period 1984–2001, asset-backed securities grew at an average annual rate of 13.7 percent (Berger [2003]). According to Furletti (2002), \$6.6 trillion of tradable securities made up the asset-backed securities market as of June 2002.

Since its introduction in 1987, credit card securitization has become a primary source of funding (Furletti [2002]) and is integral to the growth of the credit card industry (Calomiris and Mason [2003]). More generally, securitization helped the consumer finance sector reach double-digit growth in the early 1990s (Calomiris and Mason [2003]). As of June 2002, credit card asset-backed securities amounted to \$400 billion (Furletti [2002]).

Securitization also contributed to the growth in subprime lending (Laderman [2001]). Mahalik and Robinson (1998) note that the production of subprime mortgage securities more than tripled between 1995 and 1997, going from \$18 billion to \$66 billion. In addition, the percentage of subprime mortgages being financed by securitizations is rising: approximately 53 percent of all subprime mortgage loans originated in 1997 were sold in the securities market, compared with 28 percent in 1995.

The Internet and Internet security and protection technologies are important for on-line banking. As part of information technology, the Internet brings together different parties and allows them to share information. Because banking is an exchange of information between a bank and its customers, the Internet has become an important

⁸ See Office of the Comptroller of the Currency et al. (1999).

innovation for financial institutions. Using the Internet distribution channel, banks can offer increased convenience to customers by allowing them to perform their banking activities on-line at any time and in any place. Moreover, improvements in Internet security and protection technologies help prevent hackers from breaking into the computer systems. These technologies provide consumers with some confidence that their Internet bank accounts will remain secure.

Data

The sample of limited-purpose banks used in this study is taken from various sources. Credit card banks are those defined as such by the FDIC's Research Information System (RIS). The list of subprime lenders is from the FDIC's Quarterly Lending Alert (QLA). The sample of Internet banks is from the FDIC's informal database of Internet primary banks.⁹

Credit card banks are institutions (1) the sum of whose total loans, asset-backed securities on credit card receivables, and bank securitization activities of credit card loans sold and securitized with recourse is greater than 50 percent of the sum of total assets and bank securitization activities of credit card loans sold and securitized with recourse, *and* (2) the sum of whose credit card loans, asset-backed securities on credit card receivables, and bank securitization activities of credit card loans sold and securitized with recourse is greater than 50 percent of the sum of total loans, asset-backed securities on credit card receivables, and bank securitization activities of credit card loans sold and securitized with recourse.

⁹ This is an informal database and may not be comprehensive.

The FDIC's QLA is a database of insured institutions that engage in risky lending activities such as high loan-to-value loans, subprime lending, and payday lending. Insured banks with an aggregate credit exposure related to subprime loans that are equal to or greater than 25 percent of Tier 1 capital are referred to as subprime lenders. According to this FDIC definition, aggregate exposure includes principal outstanding and committed, accrued and unpaid interest, and any retained residual assets relating to securitized subprime loans. The QLA database includes information on types of subprime loans (e.g., automobile, credit card, mortgage, and other).

As of October 22, 2002 (when the FDIC's database of Internet primary banks was last updated), there were 18 banks that used the Internet as their primary method of contacting customers. One institution has been removed from the sample because it has 17 full-service brick-and-mortar branches, and it is hard to argue that an institution with 17 branches is an Internet bank. In addition, two institutions were involved in voluntary liquidation and closing prior to December 2003. As a result, 15 Internet primary banks remain in the sample.

All balance-sheet and income-statement variables are from the quarterly Report of Income and Condition (Call Report). The Federal Reserve System's Surveys of Consumer Finances data are also used.

Credit Card Banks

Credit cards date from the Diners Club, the first "universal" card, which was introduced in 1949 and used for purchases at restaurants and in department stores. Recognizing the potential profitability of providing open-end financing to consumers

who were willing to pay high rates of interest to obtain unsecured credit, commercial banks began offering general-purpose credit cards to individual consumers; the cards came into broad use in the middle to late 1960s (Canner and Lueck [1992]). Bank-type credit cards offer both convenience and liquidity to their customers: they can be used as a payment device or as open-end revolving credit. Today, the bank-type card is the most widely held among different types of credit cards.

Table 1, which reports the percentage of households with bank-type cards, shows the rise in ownership of bank-type cards over the past three decades. In 1970, 16 percent of households surveyed had bank-type credit cards. In 2001, the comparable figure was 72 percent. Moreover, table 1 shows that the increase in the shares of households with credit cards is evident at all income levels. Clearly, credit cards have become a consumer financial product important to households regardless of income.

Credit card banks are affiliated with national credit systems, such as VISA and MasterCard, to be part of a network. The national credit systems allow the cardholder to use a credit card for purchasing goods and services in areas served by other banks. Thus, sales drafts can be transferred from the merchant's bank to the cardholder's bank for collection. The national systems effectively transform local cards into national cards.

Business decisions, however, are made at the level of the card-issuing bank. Individual banks own their cardholders' accounts and determine the interest rate, annual fee, grace period, credit limit, and other terms of the accounts. Thus, this study examines the credit card business at the individual-bank level.

Consolidation

Figure 1 shows that in recent years, trends in the size and number of credit card banks have gone in opposing directions. Since 1995, the average size of credit card banks has been growing. The average asset size of credit card banks has been growing, at the average rate of roughly 20.5 percent annually. In contrast, the number of credit card banks has been declining at an annual rate of 6.8 percent. Similarly, figure 2 shows that trends for the number of credit card banks and for the mean value of credit card loan have moved in opposing directions in recent years. The average credit card loan has been steadily increasing.

Consolidation in the bank credit card industry can be attributed to a number of factors. First, consolidation may be necessary to exploit economies of scale. There is some evidence that credit card bank operations exhibit increasing returns to scale. Pavel and Binkley (1987) find evidence of increasing returns to scale at small to medium-size card banks. Canner and Luckett (1992) find that operating expenses account for a smaller portion of the total cost for the large issuers; thus, large card issuers would enjoy some benefits of economies of scale in their operations.

Second, by consolidating, banks can achieve the size necessary to conduct certain activities. For instance, the marketing tools used by credit card banks, such as television commercials, Internet advertisements, and mail solicitations, are expensive and can be used only by a few large institutions. Through consolidation, credit card banks may reach the size that will enable them to allocate funds for such costly marketing activities.

Third, because most cardholders lack a sense of identification with the banks that issued their credit cards, their loyalty to specific card banks is likely to be low; accordingly, little (in terms of customer loyalty) is lost through consolidation.

Financial Performance

Credit card banks enjoy consistently higher earnings than the banking industry as a whole. Table 2 presents interest and noninterest income for the three kinds of limited-purpose banks we are studying and for all banks. As of December 2003, the average return on assets (ROA) of credit card banks was 4.6 percent—more than four times the 1.0 percent of the industry average. Possibly the card banks' ROAs are being inflated by their securitization income.

A closer examination of card bank operations will help us understand the revenue and cost structures of these banks. As mentioned above, consumers use credit cards mainly as a means of payment and a source of open-end revolving credit. In transactions where consumers use credit cards as a payment device and pay back the loans within the grace period, banks forgo interest income, although they still earn noninterest income from fees. Only when the card is used as a source of credit do banks earn interest income as well as noninterest income.

Column 1 of table 2 shows that credit card banks earn high interest income. On average, the card banks' interest income is 10.8 percent of assets—more than twice the 5.3 percent earned by the industry during the year ending December 31, 2003.

Historically, credit card rates have been higher than competitive rates and more stable than the cost of funds. Moreover, credit card loan rates are more stable than the rates of other types of loans, such as mortgage and auto loans (Canner and Lueck [1992]).

Some economists argue that cardholders are insensitive to interest rates because the cardholders persistently underestimate the extent to which they will carry over unpaid

balances and thereby incur interest costs (Ausubel [1991]). Moreover, high and sticky card rates are attributed to the high search and switching costs. Cargill and Wendel (1996) claim that compared with small average balances, the cost of cardholders searching for lower rates is too high. Calem and Mester (1995) maintain that the inconvenience of switching accounts is another reason for cardholders to be insensitive to interest rates.

While card banks' interest income is substantially higher, card banks' interest expense is similar to the industry average: during the year ending December 31, 2003, interest expense on average amounted to 1.6 percent of total assets at credit card banks, same as for the industry. By earning substantially higher interest income without having to incur higher interest expense, credit card banks earn a high net interest income. During the year ending December 31, 2003, the mean value of net interest income to total assets ratio for credit card banks was more than double the industry average.

Credit card banks earn noninterest income by charging annual fees, finance charges, late-payment fees, over-limit fees, and other servicing fees. Feldman and Schmidt (2000) find that noninterest income makes up a greater share of net revenue at credit card banks than at non-credit card banks. Moreover, credit card banks earn noninterest income by servicing accounts that are taken off their balance sheets through securitization. By providing services to securitized assets—for example, by mailing monthly statements to customers, answering phone calls, and collecting past-due balances—card banks earn servicing fees from the trust (Furletti [2002]). Earning servicing fees from securitized assets has the effect of inflating the card banks' ROAs: in most cases, credit card securitization is structured as a sale, and by earning noninterest

income on securitized assets that are taken off their balance sheets, the credit card banks have an ROA that is elevated compared with the ROAs of institutions that keep their receivables in their asset portfolios. This situation suggests that simply examining the financial ratios, such as ROA, can be misleading, since these ratios mask the risks that banks are exposed to if they have recourse interest on their securitized assets.

At the same time, credit card banks incur high noninterest expense. On December 31, 2003, for instance, the average noninterest expense of credit card banks amounted to roughly 17 percent of total assets. Processing credit card transactions is a costly operation. Pavel and Binkley (1987) detail the mechanics of bank card transactions. When a cardholder uses his or her credit card, a sales slip is created and sent to a merchant's bank for processing. The merchant's bank credits the merchant's account for the amount on the sales and sends the sales information to the interchange facilities (such as MasterCard or Visa). The interchange facilities transfer the sales information to the issuing bank and send the amount of the transaction less an interchange fee and a per-item fee to the merchant's bank. Then the issuing bank bills the cardholder. Having to process a large volume of transactions and service a large number of accounts, credit card banks incur large processing expenses. Although advances in technology have substantially improved operating efficiency at credit card banks, operating expenses remain high. Other noninterest expenses include advertising and marketing expenses, fraud losses, and network access fees.

Like other limited-purpose banks, credit card banks are likely to suffer from high income volatility because of a lack of diversification in their loan portfolios. There are, however, a number of factors that can dampen these income fluctuations. First, card

banks' greater dependence on noninterest income can partially offset and reduce the income volatility. Second, credit card banks' cost of funds tends to go down when charge-off costs are high, and the lower cost of funds can offset the adverse effects of high default rates on the banks' profitability.

Empirical evidence shows that these factors fail to offset the credit card banks' income volatility; these banks suffer from higher income fluctuations. At the same time, their earnings are consistently higher than those of a typical bank. Even during periods of low profitability, credit card banks continue to outperform other banks.

It is important to note that certain risk factors are unique to credit card lending. In addition to being unsecured, credit card loans do not have a fixed duration. This makes measuring and managing interest-rate risk difficult. Moreover, while the mass marketing of credit cards may lead to a problem of adverse selection, small average balances on individual accounts make collection efforts cost-ineffective.

Prospects

Credit card banks are highly profitable and are an example of institutions that successfully implemented the business model of specialization. The successful use of technology and the benefits of scale economies are likely to have contributed to their superior financial performance. Given their profitability, it is reasonable to expect that these banks will continue to supply credit card services.

On the demand side, the share of households with bank-type cards has been steadily rising, and these households maintain positive attitudes toward credit cards. According to the Surveys of Consumer Finances in 2000, the holders of bank-type credit

cards consider the cards useful and believe that they are better off with them. It is reasonable to expect that the demand for credit card services will remain high and that credit card banks will continue to provide the service. It remains to be seen whether these banks have exhausted the benefits of scale economies or will continue to consolidate.

Subprime Lenders

Subprime borrowers are those with weakened or poor credit histories, and traditionally banks have stayed away from extending credit to them.¹⁰ Banks' practices have locked subprime borrowers out of the mainstream credit system.

In the early 1900s, the credit market neglected lower-income households. At the time, usury laws set a maximum rate that could be charged on loans. Such laws reflected a sentiment shared by many at the time that regarded debt for the purposes of personal consumption with great disfavor. Because of high transaction costs per account, such usury laws effectively made small loans unfeasible. In contrast, businessmen were easily able to obtain bank loans for both business and personal needs. Hence, usury laws had the effect of locking lower-income households out of the credit market. Consequently,

¹⁰ The bank regulatory agencies have recently suggested that any of the following may indicate a subprime borrower: (1) a FICO credit score of 660 or below; (2) two or more 30-day delinquencies during the past year; (3) bankruptcy within the last five years; (4) judgment, foreclosure, repossession, or charge-offs in the prior 24 months; or (5) debt service-to-income ratio of 50 percent or greater ("Expanded Guidance for Subprime Lending Programs," 2001).

many of these households had to rely on loan sharks for credit and had to pay high (illegal) rates.

Similarly today, subprime borrowers who cannot obtain credit from banks or other financial institutions are left to rely on pawnshops, payday lenders, and rent-to-own stores to meet their credit needs. Carr and Shuetz (2001) note that as many as 12 million households either have no relationship with traditional financial institutions or depend on fringe lenders for financial services. The fringe lenders remain largely unregulated, and they frequently charge excessively high fees. Relying heavily on such lenders for credit needs can marginalize borrowers and expose them to predatory practices. Carr and Kolluri (2001) note that predatory lending thrives in an environment where competition for financial services is limited or nonexistent.

In recent years, however, insured institutions have begun to participate in the subprime market. Their entry has been motivated by high prospective profits and the possibility of using existing capacity. Banks generally participate in the subprime market by, “Lending directly to subprime borrowers, purchasing subprime dealer paper or loans acquired through brokers, lending directly to financing companies involved in subprime lending, participating in loan syndications providing credit to such financing companies, and acquiring asset-backed securities issued by these financing companies.”¹¹

Table 5 summarizes the subprime loan portfolio of subprime lenders over time. The FDIC’s QLA database includes banks identified as subprime lenders starting with September 1999. For each quarter, one column reports the total amount of subprime

¹¹ Financial Institution Letters, 1997.

loans in these lenders' asset portfolios and a second column reports the ratio (as a percentage) of total subprime loans to total assets.

Table 5 also breaks down subprime loans into different types, such as automobile, credit card, mortgage, and other. For September 1999 and September 2000, automobile, credit card, mortgage, and other subprime loan information is missing because these loans are not documented in the QLA database. For all periods, mortgage and credit card loans make up the largest volume of subprime loans.

On average, subprime lenders are larger than a typical bank. As of December 31, 2003, the average total assets of subprime lenders were \$4.0 billion, compared with \$1.0 billion for the industry. It may well be that subprime lending requires a certain set of skills or resources that are more likely to be available to larger banks. These lenders may need staff with expertise in subprime lending activities, or larger staff to handle the collection efforts on delinquent loans. Moreover, accessing capital markets to fund these loans may be easier for large banks.

In September 1999, subprime loans totaled \$23 billion, which made up 7.2 percent of these institutions' assets. For the next two years the volume of lending by insured institutions to subprime borrowers steadily rose (except for June 2000), reaching \$81 billion in September 2001. Since September 2001, however, the volume of subprime loans has been gradually decreasing. By December 2003, total subprime loans had fallen to \$52 billion, making up 11.21 percent of assets at these institutions.

The number of institutions actively participating in the subprime market shows a similar trend. The number increased to 156 institutions in December 2000 and fell thereafter, dropping to 116 by December 2003.

At the same time, the ratio of subprime loans to total assets at these institutions has been increasing. Figure 3 shows that the ratio of total subprime loans to total assets at subprime lenders rose sharply from December 2001. Although the concentration in subprime loans has fallen in recent periods, the ratio of subprime loans to total assets at subprime lenders remains above those prior to December 2001. This rise suggests that the insured institutions that continue to participate in the subprime market are the ones whose loan portfolios have higher concentrations of subprime loans. It may well be that the insured institutions that are successful in lending to the subprime market are staying in the market and increasing their concentrations in these loans.

Financial Performance

On average, subprime lenders earn higher net interest income compared with the industry. Figure 4 graphs the ratio of interest income, interest expense, and net interest income to total assets across time for subprime lenders and for all banks.

Subprime lenders earn higher interest income. During the period September 1999 to December 2003, the ratio of subprime lenders' annual average interest income to assets was 9.3 percent. In comparison, the industry earned 6.8 percent on average. Subprime lenders charge higher interest rates to compensate for the greater risk posed by subprime borrowers. Some people argue that the higher interest rates charged also reflect a lack of standardization in underwriting that makes it more costly to originate and service loans to borrowers with blemished credit histories and limited income.

The high interest income earned by subprime lenders more than offsets their higher interest expense and allows them to earn higher net interest income than the

industry average. For instance, during the period September 1999 to December 2003, subprime lenders had the average annual net interest income to assets ratio of 5.8 percent, compared with 3.9 percent for the industry.

In many cases, the loan rate is not the entire source of income for subprime lenders. Subprime lenders generally charge up-front fees and prepayment penalties, both of which increase their noninterest income. At the same time, loans to subprime borrowers usually require intensive levels of servicing and collection efforts to ensure timely payment, with the result that noninterest expense is higher. Thus, subprime lenders earn lower net noninterest income. During the same period (September 1999 to December 2003), subprime lenders earned net noninterest income of –2.4 percent, compared with –2.1 percent for the industry. Moreover, high charge-offs and loan-loss provisions deplete the earnings of these institutions.

Net of these factors, subprime lenders' profitability is comparable to that of other insured institutions. During the period September 1999 to December 2003, subprime lenders earned average ROA of 1.2 percent, compared with 1.1 percent for the industry average. Similarly, the average return on equity (ROE) of subprime lenders was 10.9 percent, compared with 10.8 percent for the industry.

It is important to note that the above-average rate of return masks the large fluctuations in earnings experienced by subprime lenders. Figure 6, which graphs the rate of return over time, shows these fluctuations. In some periods, subprime lenders performed worse than the industry. For instance, in December 2001 subprime lenders had average ROA and ROE of 0.77 percent and 7.23 percent, respectively. In comparison, the industry average ROA and ROE for the same period were 0.94 percent

and 9.58 percent, respectively. In more recent periods, however, the subprime lenders have been outperforming the industry. Possibly there is a survivorship bias in the sample: only the successful participants are left, while poorly performing lenders have exited the subprime market.

Prospects

As stated above, the number of insured institutions participating in the subprime market and the dollar amount of subprime loans have fallen in recent quarters. Several factors may have led to this decreasing trend. First, some participants may have exited the market because they were performing poorly. This hypothesis is consistent with the result discussed above—that while some lenders were exiting the subprime market, the ones remaining have been outperforming the industry in recent periods. It may be that success in subprime lending requires an institution to have certain expertise and resources.

Second, increased capital requirements may have effectively eliminated the advantage that insured banks enjoyed by participating in the subprime market. Typically, insured banks hold lower capital than their nonbank counterparts (consumer finance companies and mortgage lenders). Thus, insured banks enjoyed an advantage in competing against the nonbank financial institutions in the subprime market. By holding lower capital, the insured institutions incurred a lower cost than their nonbank counterparts in making subprime loans. However, recent regulatory and supervisory changes may have effectively eliminated this advantage.

Greater supervisory scrutiny of subprime lenders' capital adequacy is well justified. Concern has been rising that subprime lending activities are accompanied by significant risks. A number of institutions have failed, while others have experienced large losses in recent years as a result of their participation in the subprime market. Among the failed subprime lenders have been Superior Bank of Chicago, Keystone, NextBank, and Pacific Thrift and Loan Company. In 2000, First Union National Bank announced the closing of its acquired subprime lender, The Money Store, along with a \$2.8 billion restructuring charge. In August 2001, Bank of America announced that it was exiting the subprime lending market; sold its \$22 billion subprime loan portfolio along with its origination, fulfillment, and servicing operations; and took a \$1.25 billion restructuring charge, of which approximately 50 percent was attributable to subprime lending.

In general, subprime lenders have poor asset quality. Past dues 30–89 days, past dues 90+ days, and gross charge-offs are all higher at subprime lenders than at a typical bank. As of December 2003, the average gross charge-offs was nine times those of a typical bank. In response, the bank regulators have begun to require more capital for subprime loans. This is both to ensure that banks' capital matches the risks they carry and to help ensure the survival of these institutions.

In "Expanded Guidance for Subprime Lending Programs" the bank regulators note that minimum capital requirements apply to loan portfolios that are less risky than the subprime loans. Therefore, the subprime lenders are expected to hold higher capital ratios and to quantify the additional capital needed for subprime lending activities. The guidance states, "Given the higher risk inherent in subprime lending programs, examiners

should reasonably expect, as a starting point, that an institution would hold capital against such portfolios in an amount that is one and one half to three times greater than what is appropriate for non-subprime assets of a similar type.”

Moreover, because subprime lenders are active participants in securitizations, the recently established risk-based capital requirements on recourse obligations, residual interests, and direct credit substitutes on banks indirectly affect subprime lenders.

There is some evidence that these supervisory and regulatory measures have led to an increase in the amount of capital held by subprime lenders. For instance, these lenders’ average capital-to-assets ratio was 11.8 percent in December 2003, compared with 9.3 percent in September 1999.

The measures undertaken by bank regulatory agencies may have effectively leveled the playing field for different lenders in the subprime market. Consequently, the advantage subprime lenders used to enjoy may have largely disappeared. The fall in the number of subprime lenders and in the dollar amount of subprime loans held by these lenders may reflect their response to the new regulatory regime.

Both market forces and regulatory changes appear to be reducing insured institutions’ participation in the subprime market. Institutions that can effectively manage the elevated risks associated with subprime lending and also be profitable will continue extending credit to the subprime market. It is not clear whether insured banks’ participation in this market has already begun to stabilize or will decrease further.

As a public policy goal, the active participation of insured institutions in the subprime market may be important for promoting the availability of credit to all

households. At the same time, it is important for these institutions to recognize the risks associated with subprime lending and to enhance risk-management practices accordingly.

Internet Banks

A small number of banks deliver banking services primarily on-line. In theory, Internet banking offers attractive features. By eliminating the physical branches and employing fewer workers, Internet banks can reduce overhead expenses (DeYoung [2001, 2002]) and salary expenses. Orr (2001) refers to a study by Booz, Allen & Hamilton that reports that a typical transaction over the Internet costs about a penny, compared with \$1.07 at a full-service teller window and \$0.27 at an ATM. Furthermore, with an Internet-based distribution channel, Internet banks can easily enter new geographic markets without starting new branches. Thus, Internet banks can grow more rapidly.

Likewise, Internet banking benefits customers by offering services at a low cost. The banks' savings in overhead and salary expenses can be transferred to their customers. The banks can offer higher rates to depositors while charging lower rates to borrowers. According to one Internet banker, savings in fixed capital can make a difference of 50–70 basis points of interest on savings accounts.¹² Moreover, Internet banking offers convenience to customers, for they can perform many types of banking transactions—for example, checking their account balances, paying bills, and applying for loans—on-line at any time without having to travel.

¹² See *Orr* (1999).

To reap such benefits, some people have started Internet primary banks. Table 6 lists the Internet banks included in this study. The first column reports the dates these banks were established: the dates range from 1933 to 2001. A large share of these banks are recently established in or after 1998. The second column describes the service facilities of these institutions. It is noteworthy that only three banks have exclusively cyber offices. Others maintain one or two full-service brick-and-mortar offices. It may well be that physical branches are made available for types of transactions that are impossible to perform via the Internet (transactions such as getting cash and depositing checks).

Internet banks are bigger than the industry average. For instance, in December 2003, average total assets of Internet banks were \$3.5 billion, compared with \$1 billion for all banks and thrifts. To achieve such size, Internet banks have been growing rapidly. Table 3 shows that their average asset growth is 20.3 percent, and loan growth is 30.5 percent. Because of such rapid growth, Internet banks are relying on expensive and volatile funds (average noncore funds amount to 44.5 percent of their assets).

The large size and rapid growth of Internet banks may be associated with these institutions' heavy reliance on technology. They may have to pass a certain size threshold in order to earn enough revenues to cover the high fixed costs associated with technology-intensive production processes. Earlier studies found that technology-intensive production processes exhibit economies of scale. Thus, these institutions are growing rapidly to take advantage of the benefits of scale economies associated with technologically intensive production processes.

Financial Performance

Contrary to prediction, Internet banks have not proven to be very profitable. In fact, their performance is inferior to that of the industry. As of December 2003, for instance, Internet banks had an average ROA of 0.7 percent, compared with 1.0 percent for the industry. Moreover, the average ROE of Internet banks was 8.8 percent, compared with the industry average of 10.0 percent.

These banks' low profitability is attributed to both low net interest and low noninterest income. Internet banks earn lower interest income than the industry. Some Internet banks buy loans on the wholesale market instead of originating them, and thus earn lower interest income. Internet banks also incur higher interest expense by offering higher rates on deposits and relying more heavily on expensive sources of funds. As table 3 shows, in December 2003 noncore funds amounted to 44.5 percent of total assets at Internet banks, compared with 19.5 percent at a typical bank. Such heavy reliance on "hot" money may have resulted from the failure to attract a core client base (Hine and Phillips [2003]) and from the attempt to achieve a certain size through rapid growth.

Compared with the industry, Internet banks also earn lower net noninterest income. The reason is that although they earn higher noninterest income, they also incur higher noninterest expense: the technology-intensive production process used by Internet banks is likely to have high fixed costs. (Banks must generate a large enough volume to offset the high fixed costs.) Moreover, Internet banks spend more on salary expenses. It may well be that Internet delivery systems require fewer but better-skilled employees resulting in higher salary expenses (DeYoung [2001]).

Internet banks are also likely to spend more on marketing and advertising to attract customers to their Web sites. Unlike a branching bank, an Internet bank does not benefit from free advertising whenever a potential customer walks or drives past it. Instead, Internet banks have to purchase advertising to attract new customers to their Web sites. DeYoung (2001) refers to a study by Rosen and Howard (2000) that finds that compared with the average brick-and-mortar retailer, the average on-line retailer spends more than ten times as much per purchase on marketing and advertising. Other expenses include contracts with vendors to service and maintain the Web site, and payments to ATM networks.

In addition, Internet banks incur unanticipated costs by offering physical delivery channels. As noted above, the majority of Internet banks have one or two physical branches, probably because customers need to perform certain transactions at physical locations.

Prospects

Internet banks underperform brick-and-mortar banks, with little evidence of improvement over time. This situation may be attributed to a number of factors. For one thing, Internet banks suffer from low consumer demand. The low volume of business is partly explained by the fact that most Internet banks were established only recently. Like branching de novo banks, newly established Internet banks need time to attract depositors, find borrowers who are good credit risks, and find other profitable opportunities. Low business volume is also attributed to limited consumer demand for Internet services (Orr [2001]). For many consumers, a technology-driven Internet

delivery channel can be both intimidating and frustrating. In addition, transactions such as making deposits or taking out cash are impossible to perform via the Internet. Moreover, automated banking services lack person-to-person contact and do not create customer loyalty.

Relative to branching banks, Internet banks are also at a competitive disadvantage in lending to small businesses because they lack the means of building long-term relationships with borrowers. Small businesses tend to be informationally opaque, with little public information available. Banks can alleviate information asymmetries and agency costs by building a relationship with the borrower. Through repeated interactions, banks can gain private information on borrowers and can better monitor the borrower to prevent unanticipated risk-taking activities.

In contrast, Internet banks use automated underwriting procedures for generating loans and manage risk by diversifying large pools of these loans. Through such transaction-lending practices, Internet banks fail to build relationships with borrowers. Consequently, Internet banks are less likely to gain proprietary information about their borrowers and less likely to monitor them effectively. Hence, Internet banks are at a disadvantage compared with branching banks.

For these reasons, Internet banks can be expected to have only a modest chance of success.

Conclusion

Limited-purpose banks challenge the traditional notion of banking. Although relatively few in number, they have unique business models and product mixes that have

attracted considerable attention. This study has described their business models, evaluated their performance and risk characteristics, and discussed their prospects.

Some business strategies adopted by limited-purpose banks lead to superior financial performance. For instance, credit card banks are highly profitable compared with both other limited-purpose banks and the industry benchmark. Because of the inherent riskiness of unsecured credit, credit card banks have poor asset quality and high default rates. However, their interest and noninterest income is sufficiently high, leading to high profits. Given their volatile yet robust profitability, credit card banks are likely to have found a permanent place in the banking sector. Moreover, the increasing trend of consolidation suggests that a few large institutions will remain and dominate the sector.

In contrast, other business models show lackluster performance. Subprime lenders earn higher interest income than the industry average, yet poor asset quality diminishes those earnings. Moreover, recent initiatives by the banking regulators impose higher capital requirements on subprime loans and may have eliminated the advantage the insured banks enjoyed in the subprime market. Consequently, the number of subprime lenders has been falling in recent years. It is reasonable to expect that bank participation in subprime lending will remain at reduced levels, if it does not decline further.

Similarly, Internet banks have not proven to be profitable. They incur high costs in acquiring and keeping customers and in using technology-intensive production processes. Moreover, Internet banks fail to build relationships with borrowers and thus forgo an informational advantage with respect to their borrowers. For these reasons, Internet banks have only a modest chance of success.

The evidence presented in this paper suggests that some limited-purpose banks may have little success in the long run. But although some of these business lines may be less successful as free-standing operations, they may be suitable as part of a larger bank. An institution such as Citibank is an example of a large institution that offers all such services.

Integrating such disparate business lines and offering various financial products and services may lead to economies of both scope and scale; and institutions with diversified asset portfolios may then achieve more stable streams of income. Moreover, institutions offer convenience to their customers by providing different financial products and services in one place.

The trend of institutions offering multiple services and products is already evident. For instance, increasing numbers of banks are using the “click-and-mortar” strategy of adding an Internet site to their physical branches. Through the Internet site, customers can perform banking transactions such as accessing accounts and transferring funds on-line. In addition, customers can make deposits, apply for a loan, or withdraw cash from their accounts in physical branches or at ATM networks. Gup (2003) refers to studies that document the preference by customers of large banks (such as Morgan Online and Bank of America) for a combination of Internet-based tools and a close relationship with a personal banker. Thus, diversified banks offering multiple services may well be the wave of the future.

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Table 1
Prevalence of Credit Cards among U.S. Households (percentage)

	1970	1977	1983	1989	1995	1998	2001
Households with bank-type credit cards							
Total	16	38	43	56	66	68	72
Lowest-income quintile	2	11	11	17	28	28	
Middle-income quintile	14	36	41	62	71	72	
Highest-income quintile	33	69	79	89	95	95	
Households with outstanding balances on bank-type card after the most recent payment	37	44	51	52	56	55	54

Source: Federal Reserve Board's Surveys of Consumer Finances.

Table 2
Interest and Noninterest Income* (as of December 31, 2003)

	(1)	(2)	(3)	(4)
	Credit Card	Internet	Subprime	All Banks and Thrifts
<i>Mean</i>				
Interest income	10.8	4.6	8.0	5.3
Interest expense	1.6	2.1	2.3	1.6
Net interest income	9.2	2.5	5.8	3.7
Noninterest income	18.5	1.1	3.4	1.6
Other noninterest income	0.0	0.1	0.1	0.0
Noninterest expense	16.8	3.4	5.6	3.6
Other noninterest expense	13.8	1.2	2.9	1.3
Net noninterest income	1.7	-2.3	-2.3	-2.0
<i>ROA</i>	4.6	0.7	1.2	1.0
<i>ROE</i>	24.3	8.8	11.1	10.0
<i>Median</i>				
Interest income	8.7	4.5	6.2	5.2
Interest expense	1.6	2.0	2.1	1.6
Net interest income	7.0	2.3	4.1	3.6
Noninterest income	10.2	0.2	0.8	0.7
Other noninterest income	0.0	0.0	0.0	0.0
Noninterest expense	9.3	2.6	3.6	2.8
Other noninterest expense	6.2	0.8	1.2	0.8
Net noninterest income	1.5	-1.6	-2.4	-2.0
<i>ROA</i>	3.6	0.8	1.1	1.0
<i>ROE</i>	22.4	9.9	11.1	9.9
No. of observations	36	15	116	9181

*These are merger-adjusted four-quarter totals.

Table 3

Comparison of Financial Ratios (as of December 31, 2003)

	(1)	(2)	(3)	(4)
Ratio	Credit Card Banks	Internet Banks	Subprime Lenders	All Banks and Thrifts
Assets (in \$1,000s)	9,677,284	3,490,314	4,008,279	988,648
Equity	20.6	9.3	11.8	11.5
Deposits	0.4	0.7	0.7	0.8
Nonperforming & nonaccrual	4.9	1.1	4.0	1.4
Gross charge-offs ¹	6.3	0.3	2.7	0.3
Provision for loan losses ¹	4.6	0.2	1.8	0.3
Income before taxes ¹	6.4	0.9	1.9	1.5
Liquid assets	17.1	27.8	26.1	34.3
Loans & long-term securities	74.3	71.9	74.6	69.7
Noncore funding	54.6	44.5	27.7	19.5
Loan-loss reserves	5.3	0.6	2.3	0.9
Asset growth	47.7	20.3	13.6	9.8
Equity growth	18.9	2.5	10.5	0.5
Loan growth	42.3	30.5	16.0	15.4
No. of observations	36	15	116	9181

Note: All the variables except assets are in ratios (in %) to total assets.

¹ Gross charge-offs, provision for loan losses, and income before taxes are merger-adjusted four-quarter totals.

Table 4

Mean Values of Loan-to-Assets ratios (as of December 31, 2003)

	(1)	(2)	(3)	(4)
	Credit Card Banks	Internet	Subprime	All Banks and Thrifts
Cash	4.6	2.8	5.5	5.8
Securities	9.0	23.6	17.4	24.6
Loans & leases	73.6	68.2	70.5	61.7
Real estate loans	3.4	51.4	43.9	42.1
Commercial & industrial	1.8	3.1	5.8	8.9
Consumer	67.8	11.3	18.8	5.9
Leasing	0.0	1.4	0.7	0.3
Premises and fixed assets	0.9	0.5	1.6	1.8
Other assets	11.0	3.1	3.4	2.4
No. of observations	36	15	116	9181

Note: All the variables except assets are in ratios (in %) to total assets.

Table 5

Total Subprime Loans, Amount and as Percentage of Total Assets of Subprime Lenders

Date	Sep-99		Dec-99		Mar-00	
	\$	Ratio	\$	Ratio	\$	Ratio
	(millions)	(%)	(millions)	(%)	(millions)	(%)
Subprime total	23,143	7.19	28,840	5.97	66,770	7.12
Automobile			69	0.01	2,924	0.31
Credit card			22	0	10,076	1.07
Mortgage			74	0.02	25,838	2.75
Other			37	0.01	7,723	0.82
Payday			---		---	
No. of observations	121		131		145	
Date	Jun-00		Sep-00		Dec-00	
	\$	Ratio	\$	Ratio	\$	Ratio
	(millions)	(%)	(millions)	(%)	(millions)	(%)
Subprime total	70,914	7.29	67,408	6.77	67,860	6.68
Automobile	2,872	0.30			3,611	0.36
Credit card	14,479	1.49			18,505	1.82
Mortgage	40,372	4.15			42,485	4.18
Other	7,743	0.80			3,290	0.32
Payday	---				---	
No. of observations	148		145		156	
Date	Mar-01		Jun-01		Sep-01	
	\$	Ratio	\$	Ratio	\$	Ratio
	(millions)	(%)	(millions)	(%)	(millions)	(%)
Subprime total	71,503	7.20	73,149	7.36	80,717	7.97
Automobile	2,860	0.29	4,806	0.48	5,245	0.52
Credit card	24,393	2.46	24,936	2.51	25,105	2.48
Mortgage	41,809	4.21	41,169	4.14	46,872	4.63
Other	2,031	0.20	1,984	0.20	3,341	0.33
Payday	79	0.01	64	0.01	38	0.00
No. of observations	144		133		127	

Table 5 (Continued)

Date	Dec-01		Mar-02		Jun-02	
	\$	Ratio	\$	Ratio	\$	Ratio
	(millions)	(%)	(millions)	(%)	(millions)	(%)
Subprime total	71,157	14.56	69,203	13.21	65,145	12.43
Automobile	4,410	0.90	4,282	0.82	4,898	0.93
Credit card	26,256	5.37	27,962	5.34	25,371	4.84
Mortgage	34,246	7.01	31,434	6.00	29,283	5.59
Other	6,044	1.24	5,426	1.04	5,428	1.04
Payday	52	0.01	42	0.01	49	0.01
No. of observations	130		129		129	
Date	Sep-02		Dec-02		Mar-03	
	\$	Ratio	\$	Ratio	\$	Ratio
	(millions)	(%)	(millions)	(%)	(millions)	(%)
Subprime total	65,800	12.21	53,879	9.86	53,775	9.67
Automobile	4,602	0.85	4,504	0.82	21,156	3.81
Credit card	20,504	3.81	18,667	3.42	17,319	3.11
Mortgage	33,259	6.17	27,687	5.07	28,723	5.17
Other	5,032	0.93	2,939	0.54	2,818	0.51
Payday	46	0.01	39	0.01	18	0.00
No. of observations	129		127		119	
Date	Jun-03		Sep-03		Dec-03	
	\$	Ratio	\$	Ratio	\$	Ratio
	(millions)	(%)	(millions)	(%)	(millions)	(%)
Subprime total	55,417	10.67	51,382	10.85	52,119	11.21
Automobile	23,954	4.61	6,516	1.38	6,470	1.39
Credit card	16,104	3.10	15,916	3.36	15,675	3.37
Mortgage	35,684	6.87	24,682	5.21	27,666	5.95
Other	2,687	0.52	2,347	0.50	2,387	0.51
Payday	8	0.00	0	0.00	0	0.00
No. of observations	120		119		116	

Source: FDIC, Quarterly Lending Alert.

Table 6
Internet Primary Banks (as of May 20, 2002)

Name	Date Established	Type of Service	Description
Nexity Bank	1968	1-full-service brick-and-mortar office	
National American Bank	1983	1-full-service brick-and-mortar office	
Etrade Bank	1933	1-full-service brick-and-mortar office	E-Trade Group acquired Telebank Financial, the owner of Telebank, for \$1.8 billion in 1999. Telebank started 10 yrs ago as a virtual S&L that took deposits and made loans via phone, fax, and mail. Telebank added the Internet to its delivery mix for information and customer service. Telebank added Internet transactions in March 1998.
Netbank	1988	1-full-service cyber office	Premiered in 1996 and calls itself "The World's Largest Independent Internet Bank."
Principal Bank	1998	1-full-service cyber office	Began operations in Feb. 1998. Offers its customers traditional banking products via the telephone, Internet, ATM, or USPS.
First Internet Bank of Indiana	1998	1-full-service cyber office	Internet-only bank.
Ebank	1998	1-full-service brick-and-mortar office	Internet-only bank.
GMac Bank	2001	1-full-service brick-and-mortar office, 2-limited-service administrative offices	Banking over the Internet, email, phone, and ATM.
BMW Bank of North America	1999	1-full-service brick-and-mortar office	Internet bank.
Deepgreen Bank	1999	1-full-service brick-and-mortar office	Internet-only bank.
Lydian Private Bank	2000	1-full-service brick-and-mortar office	VirtualBank, a federally chartered, FDIC-insured bank based in Palm Beach County, Florida, is the Internet banking subsidiary of Lydian Trust Company.
The Bancorp Bank	2000	1-full-service brick-and-mortar office	Internet bank.
ING Bank FSB	2000	2-full-service brick-and-mortar offices	Internet bank
Bank of Internet USA	2000	1-full-service brick-and-mortar office	Internet bank
Earthstar Bank	2001	1-full-service brick-and-mortar office	Internet bank

Figure 1
Number of Credit Card Banks and Mean Assets

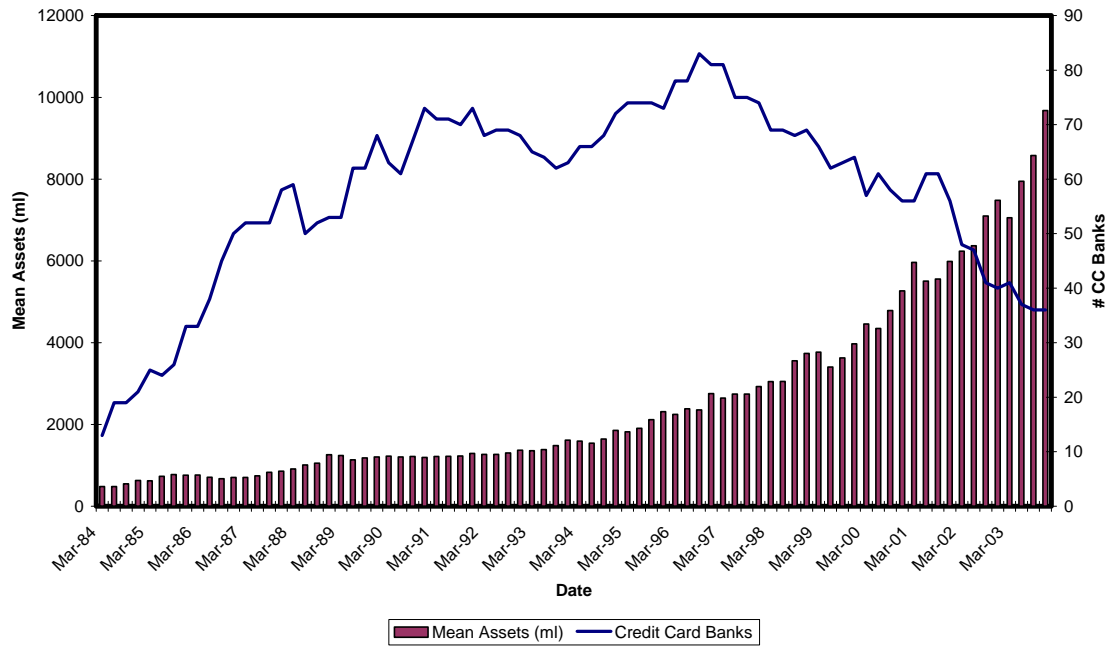


Figure 2
Number of Credit Card Banks and Mean Credit Card Loans

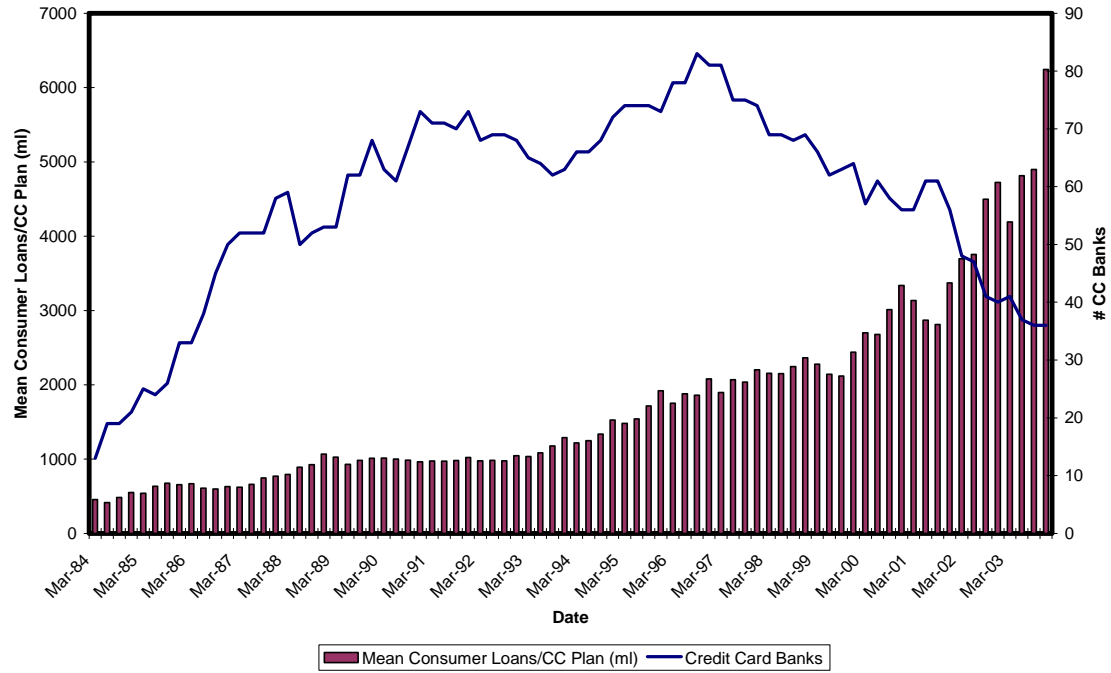


Figure 3
Subprime Loan Amounts

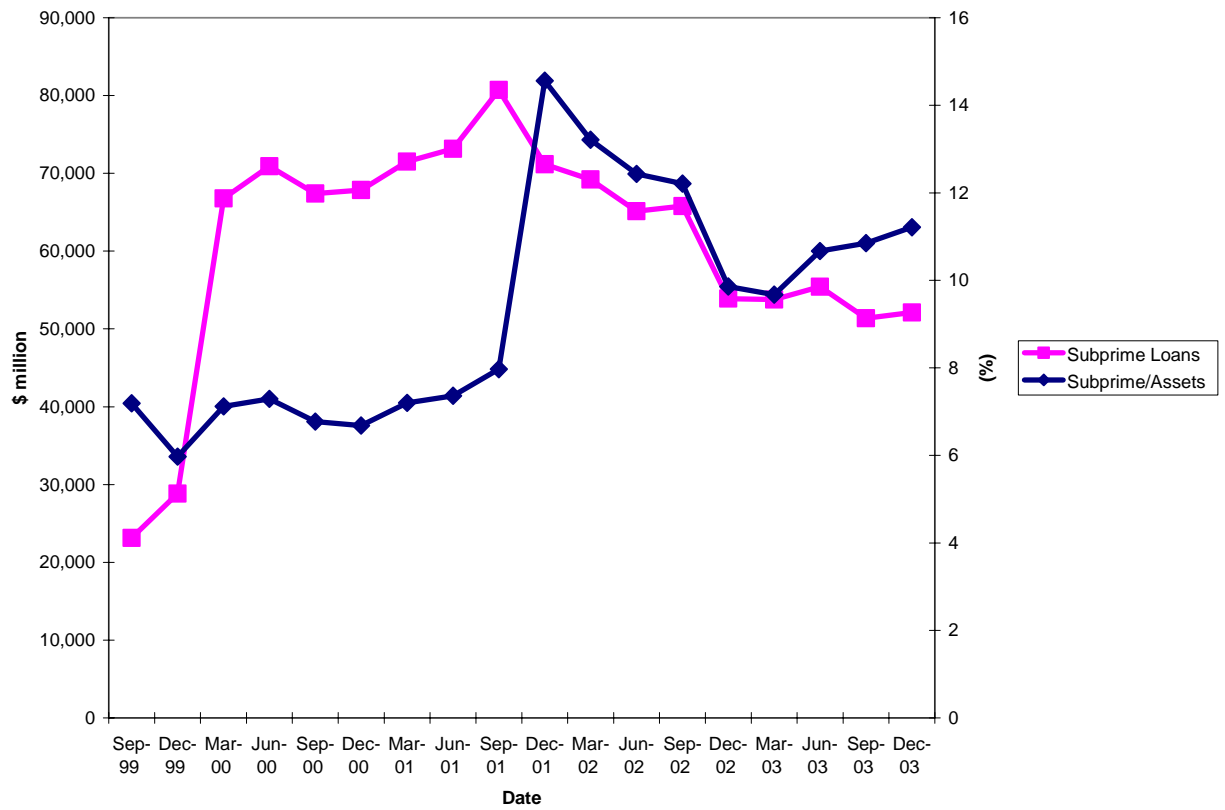
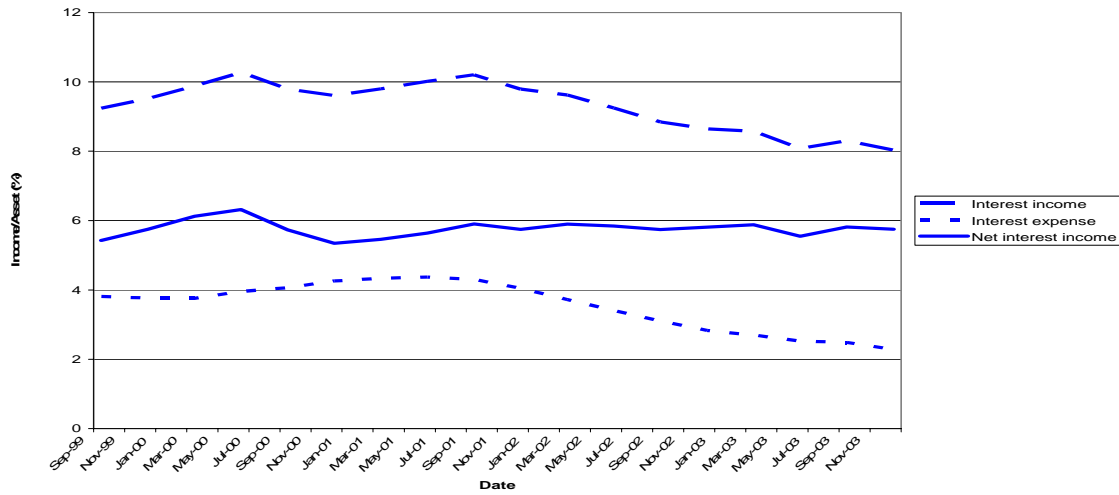
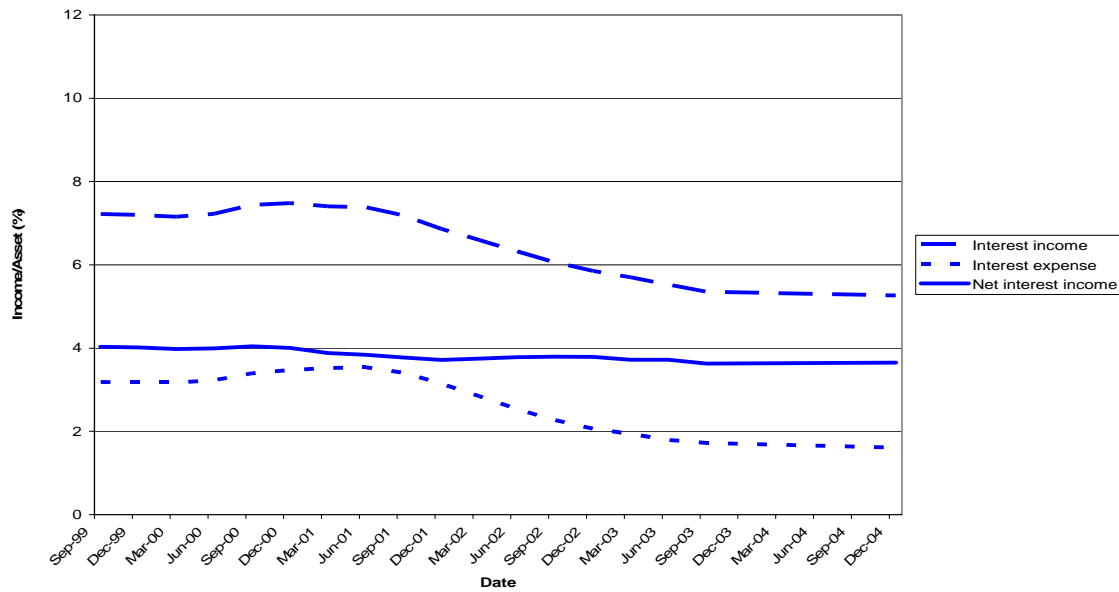


Figure 4
A. Subprime Lenders
Average Net Interest Income*

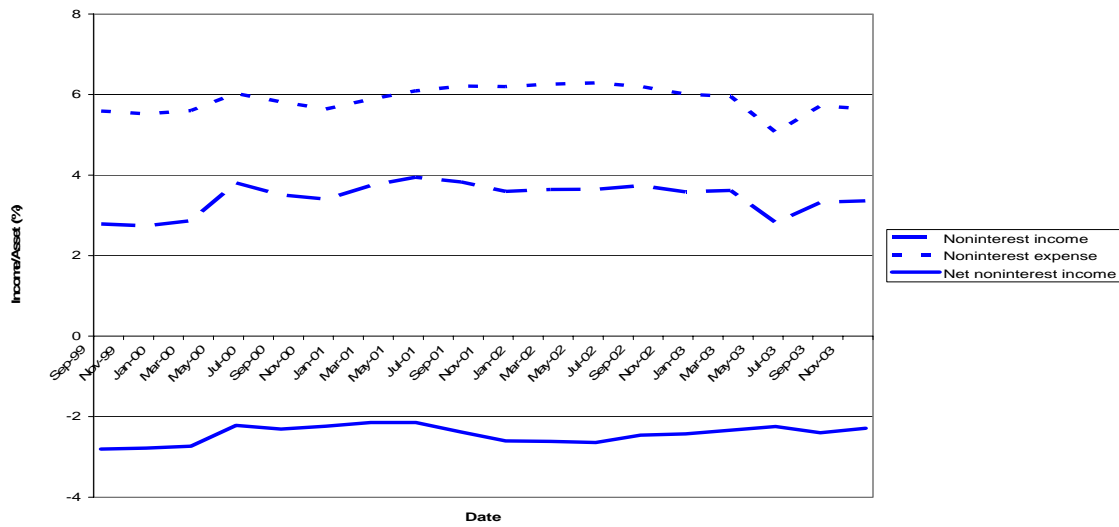


B. All Banks
Average Net Interest Income

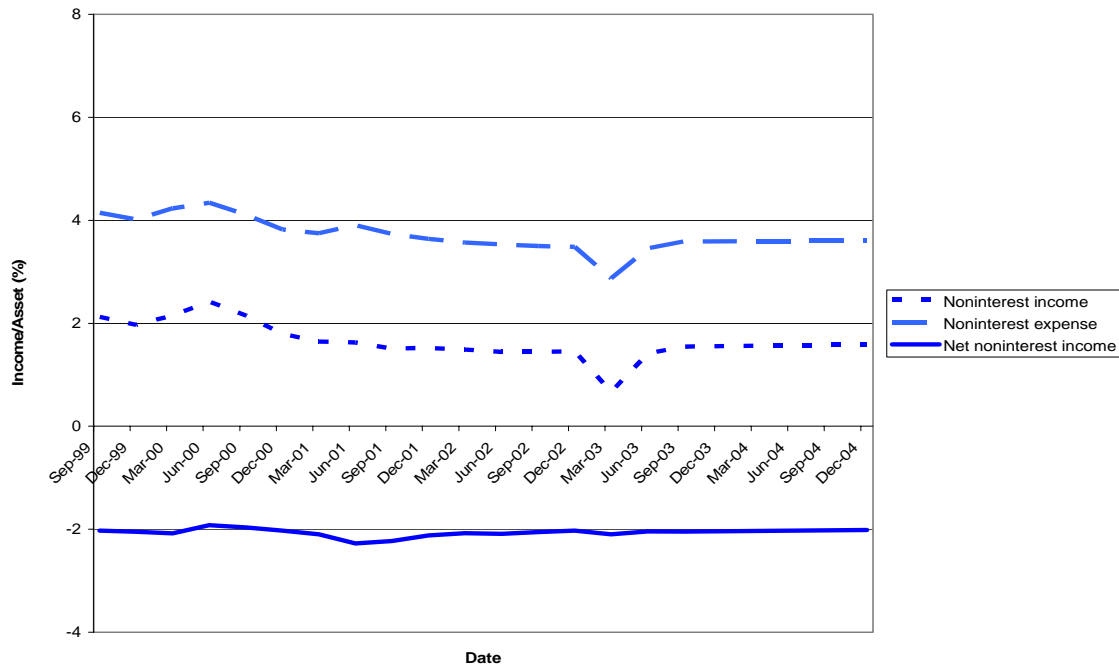


* Based on 147 observations during June 2000 instead of 148 observations. One institution was taken out for this calculation due to its extreme values.

Figure 5
A. Subprime Lenders
Average Net Noninterest Income



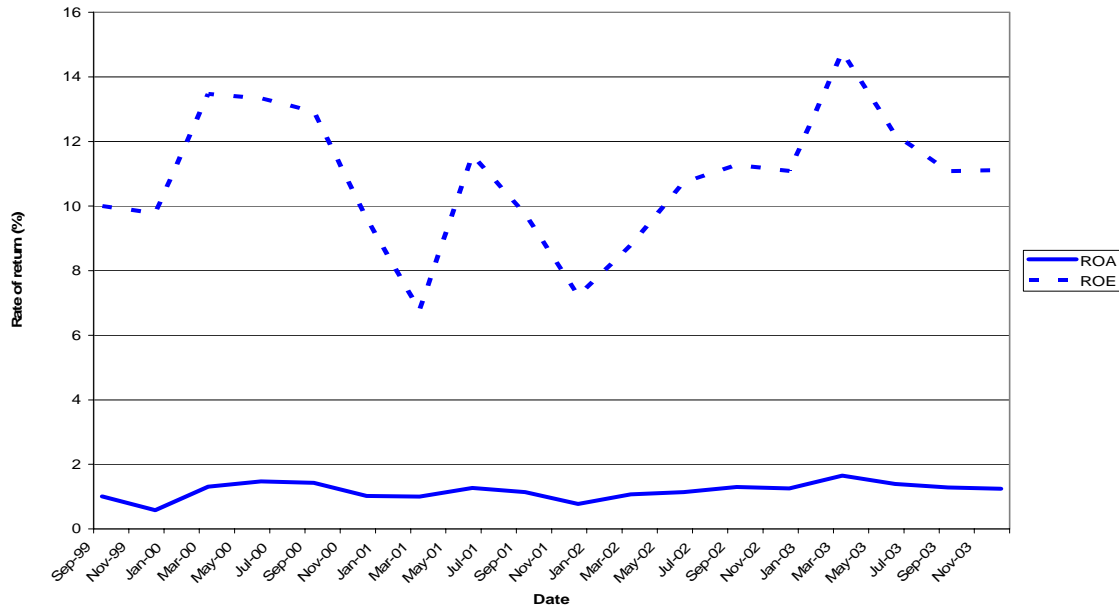
B. All Banks
Average Net Noninterest Income



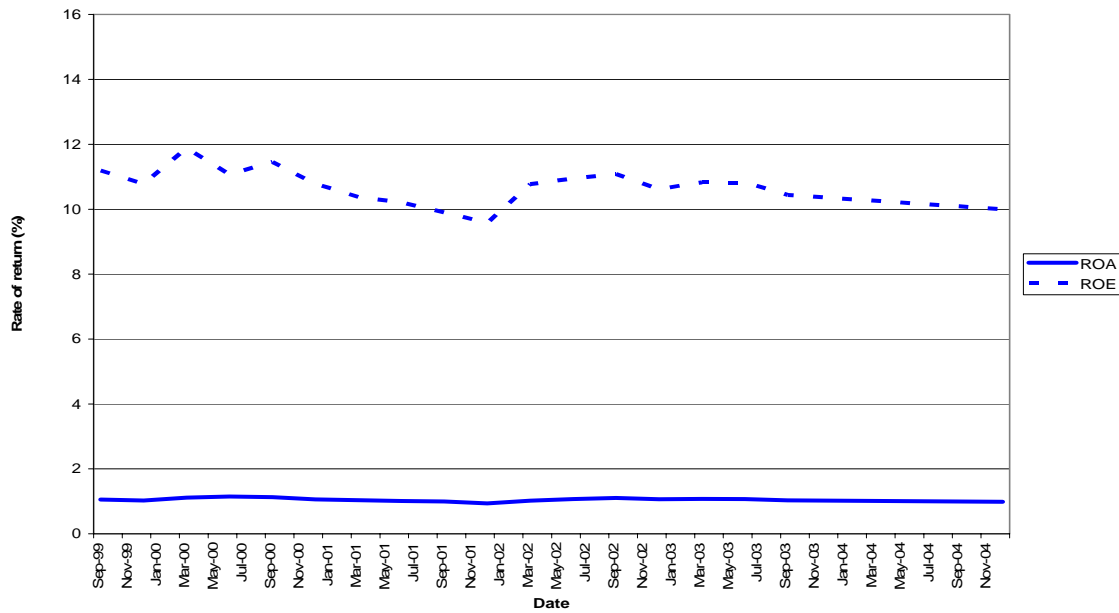
* Based on 147 observations during June 2000 instead of 148 observations. One institution was taken out for this calculation due to its extreme values.

Figure 6

A. Subprime Lenders*
Average ROA/ROE



B. All Banks
Average ROA/ROE



* Based on 147 observations during June 2000 instead of 148 observations. One institution was taken out for this calculation due to its extreme values.